position ⌀ of the area about a rotational center defined as a foot of the rotational axis on the surface of the plane diffraction grating.

6. (Amended) An optical system comprising:

a plane diffraction grating having grooves on a surface of the plane diffraction grating whose profile at an area is determined depending on a rotational position ⌀ of the area about a rotational center defined as a foot of a rotational axis which is normal to the surface;

a mechanism for rotating the plane diffraction grating about the rotational axis;

an incidence optical system for casting a converging beam of light on a point of the surface of the plane diffraction grating, the point being apart from the rotational center.

11. (Amended) A method of producing a plane diffraction grating having grooves on a surface thereof whose profile at an area is determined depending on a rotational position ⌀ of the area about a rotational center defined as a foot of a rotational axis, the method comprising the steps of:

coating a substrate with a photo-resist layer and forming a photo-resist mask from the photo-resist layer according to a preset pattern of groove arrangement;

covering the photo-resist mask with a sector mask having an opening of a narrow sector whose apex is set at the rotational center;

etching the substrate over the sector mask with an appropriate etching condition depending on a rotational position of the sector mask about the rotational center;

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rotating the sector mask by an angle of the apex of the narrow sector; and

repeating the etching process and the mask rotating process until the narrow sector sweeps the surface of the substrate.